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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,641	12/05/2001	Masayuki Nishikawa	70868/56773	6791
21874	7590	06/03/2005	EXAMINER	
EDWARDS & ANGELL, LLP P.O. BOX 55874 BOSTON, MA 02205			ORTIZ CRIADO, JORGE L	
		ART UNIT		PAPER NUMBER
		2655		

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/004,641	NISHIKAWA, MASAYUKI
	Examiner Jorge L. Ortiz-Criado	Art Unit 2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 30 November 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-7 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1,2,6 and 7 is/are rejected.
- 7) Claim(s) 3-5 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informalities:

Claim 1 recites “driving means... fro displacing”, should be for”

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano U.S. Patent no. 6,438,090 in view of Takahashi U.S. patent No. 6,108,139.

Regarding claim 1, Nakano discloses an optical pickup apparatus for a recording medium having a light transmitting layer on which an information signal is recorded (See Figs 6 and 7, col. 7, lines 3 to col. 9, line 30), comprising:

a light source for emitting light (See Fig. 6, ref# 1);

an objective lens for focusing the light emitted from the light source onto the recording medium (See Fig. 7, ref# 10);

focusing driving means for moving the objective lens in a first direction which is parallel to an optical axis thereof (See col. 9, line 3-11);

tracking driving means for driving the objective lens in a second direction which is perpendicular to the optical axis (See col. 8, line 6-15);

a lens assembly disposed between the light source and the objective lens and having a plurality of lenses each of which is independently displaceable along an optical axis thereof (see Fig. 6, ref# 7,9) ; and

driving means for displacing the lenses in the lens assembly independently of each other along the optical axes thereof in such a manner as to reduce a spherical aberration caused due to a thickness of the light transmitting layer and spherical aberrations which occur on optical surfaces of an optical system (See col. 7, lines 26-36, col. 8, lines 22-36, col. 8, lines 48-65; col. 9, lines 12-19;col. 6, lines 44- “spherical aberration as changing focal length is caused by deviations in the lens and Nakano discloses proper focus position to disks 16a, and 16b of different thickness and surfaces”)

Nakano further teaches that the relay lens #7 has a separate driving element corresponding lens in the lens assembly, for displacing the lens, but does not expressly disclose wherein the lens #9 of the lens assembly has a separate driving element.

However, this feature is well known in art and is evidenced by Takahashi which discloses an optical pickup apparatus for a recording medium having a light transmitting layer on which an

information signal is recorded, an objective lens for focusing the light emitted from the light source onto the recording medium focusing driving means for moving the objective lens in a first direction which is parallel to an optical axis thereof, tracking driving means for driving the objective lens in a second direction which is perpendicular to the optical axis , a lens assembly disposed between the light source and the objective lens and having a plurality of lenses each of which is independently displaceable along an optical axis thereof and a driving means, having separate driving elements corresponding to the respective lenses in the lens assembly, for displacing the corresponding lenses in the lens assembly (see Fig. 4; col. 4, lines 3-34)

It would have been obvious to one with ordinary skill in the art at the time of the invention was made to include separates driving elements corresponding to the respective lenses in the lens assembly, in order to more accurately correct the aberrations due to the thickness of the optical disk as suggested by Takahashi and which is desired to Nakano.

Regarding claim 2, Nakano in combination with Takahashi shows a first lens as one of the plurality of lenses in the lens assembly; wherein the first lens has an optical axis in a plane containing an axis line of the recording medium, said optical axis being parallel to said axis line; is disposed in a plane containing an axis line of the recording medium and has an optical axis parallel to the axis line (See Nakano Fig. 6, ref# 9);

optical reflective means disposed on the optical axis at a position nearer to the light source than the first lens (See Nakano Fig. 6 ref# 8); and

a second lens as one of the plurality of lenses in the lens assembly, wherein the second lens is disposed nearer to the light source than the optical reflective means (See Nakano Fig. 6, ref# 7)

4. Claim 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano U.S. Patent no. 6,438,090 in combination with Takahashi U.S. patent No. 6,108,139 and further in view of Maeda et al. U.S. Patent no. 6,414,931.

Regarding claim 6, Nakano in combination with Takahashi discloses all the limitation of base claim 2 as outlined above and further Nakano discloses a first supporting structure for supporting the first lens (See Fig. 3) and a second supporting structure for supporting the second lens (this feature is inherently for Nakano since the actuator acts on the second lens as in the first lens) and

But, Nakano in combination with Takahashi fails to disclose wherein at least one of the first and second supporting structures includes: a first supporting member, formed of an elastic material, extending in a direction perpendicular to the optical axis; and a second supporting member, formed of an elastic material, provided parallel to and spaced from the first supporting member in the direction of the optical axis.

However, this feature is well known in the art as evidenced by Maeda et al. which discloses a lens driving device for optical heads and systems which discloses a supporting structure including a first supporting member, formed of an elastic material, extending in a direction perpendicular to the optical axis; and a second supporting member, formed of an elastic

material, provided parallel to and spaced from the first supporting member in the direction of the “optical axis” (See Fig. 2, ref# 15a,15c; 15b,15d and/or ref# 10a,10c;10b,10d)

It would have been obvious to one with ordinary skill in the art at the time of the invention to include a first and second supporting members of elastic materials to at least one of the first and second supporting structures in order to suppress fluctuations and securely positioning the lens maintaining the desired position at the desired value minimizing vibrations and suppressing spherical aberrations due to the fluctuations as suggested by Maeda et al.

Regarding claim 7, Nakano in combination with Takahashi and Maeda et al. shows wherein a center of mass of one of the first and second lenses is located about midway between the first and second supporting members along the direction of the optical axis (See Maeda et al. col. 3, lines 57-67)

Allowable Subject Matter

5. Claims 3-5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
6. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fails to teach alone and or in combination, the combined **first voice coil provided on the objective lens** and wound about the optical axis, a second voice coil provided on the **first lens in the lens assembly** and wound about the optical axis, and Specifically a pair of permanent magnet pieces disposed outward of the first and second voice coils and having magnetic poles oriented perpendicularly to the optical axis; focusing driving means for performing focusing by varying a current in the first voice coil; first driving means for performing positioning according to a type of the recording medium by feeding a current to the second voice coil; and second driving means for performing positioning according to the type of the recording medium by driving the second lens along the optical axis thereof..

Response to Arguments

7. Applicant's arguments with respect to claims 1-2 and 6-7 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jorge L. Ortiz-Criado whose telephone number is (571) 272-7624. The examiner can normally be reached on Mon.-Thu.(8:30 am - 6:00 pm),Alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne R. Young can be reached on (571) 272-7582. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



DAVID L. OMETZ
PRIMARY EXAMINER

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